



**U.S. Department of Energy**

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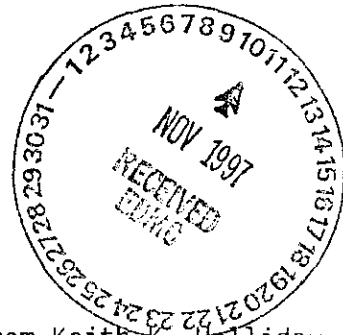
**SEP 30 1997**

Mr. Steve M. Alexander  
Perimeter Areas Section Manager  
Nuclear Waste Program  
State of Washington  
Department of Ecology  
1315 W. Fourth Avenue  
Kennewick, Washington 99336-6018

Dear Mr. Alexander:

**EQUIVALENCY DEMONSTRATION FOR THE 100-D PONDS**

- References: (1) Ecology ltr. to Glenn Goldberg from Keith K. Holliday  
"Ecology Response to Equivalency Demonstration for 100-D  
Ponds," dtd. July 24, 1997, CCN 049943
- (2) RL ltr. to Steve M. Alexander from Glenn I. Goldberg  
"Equivalency Demonstration for 100-D Ponds," dtd. May 9,  
1997, CCN 046010



This letter is in response to the State of Washington Department of Ecology (Ecology) review (Reference 1) of the subject document that was submitted to Ecology in May 1997 (Reference 2). In the review, Ecology presented objections to the demonstration that subsurface soils meet clean closure standards. This response is intended to promote a dialogue on the need to further characterize subsurface soil at the 100-D Ponds. The U.S. Department of Energy, Richland Operations Office (RL), does not dispute Ecology's authority regarding characterization of the vadose zone, and welcomes further discussion on this matter.

The primary purpose of the equivalency demonstration was to present a technical analysis of Ecology's contention that contamination from the 100-D Ponds might remain in the vadose zone beneath the ponds. Ecology's response to the equivalency demonstration focused exclusively on regulatory requirements for Resource Conservation and Recovery Act of 1976 (RCRA) closures and contained no comments regarding the validity or credibility of the technical arguments in the equivalency demonstration. Lacking any indication from Ecology on their perception of the technical merits of the equivalency demonstration, the following addresses Ecology's review comments (Reference 1) on their regulatory authority regarding requirements for clean closure of RCRA Treatment, Storage, and/or Disposal (TSD) units.

The primary objection that Ecology has with the regulatory discussion in the equivalency demonstration concerns the phrase "... there is no Washington State Department of Ecology (Ecology) regulation or guidance that requires testing of subsurface soils." (Reference 2, page 1 of attachment). Ecology

provides references to regulatory language to refute this statement, but those citations do not contain any "requirements" that Ecology be provided analyses of soil beneath a TSD unit to groundwater, which was the point emphasized in the equivalency demonstration. The citations merely establish Ecology's authority to require such data collection, if deemed necessary. RL does not disagree that Ecology has such authority, but questions the necessity of the data. This is why the initial submittal (Reference 2) focused on technical arguments.

Several passages, quoted below, are representative of the regulations cited by Ecology in support of their position:

- WAC173-340-320: "(1) Purpose. The purpose of the site hazard assessment is to provide sufficient sampling data and other information to: . . . (b) To identify the hazardous substance and provide some information regarding the extent and concentration of the substance; (c) Identify site characteristics that could result in the hazardous substance entering and moving through the environment: . . . "
- WAC173-340-320: "(4) . . . a site hazard assessment shall include, as appropriate, . . . (f) Preliminary characterization of the subsurface and ground water actually or potentially affected by the release, including vertical depth to ground water and distance to nearby wells. . . . "
- Ecology Publication #94-111, Guidance for Clean Closure of Dangerous Waste Facilities: "Ecology may require soil sampling at various depths . . . " "If surface samples demonstrate contamination, then sampling must be conducted at depth intervals to determine the extent of contamination."

These citations recognize that there may be situations where deep vadose zone soil samples are needed to support clean closure, but they clearly do not "require" samples at depth. It is RL's position that based on several technical arguments, the sampling and analyses performed to date at the 100-D Ponds demonstrates that this TSD unit can be clean closed in accordance with the above regulations without the need for additional samples from the vadose zone. Samples have been collected to a depth below the known contamination sufficient to demonstrate that contamination did not migrate below the contaminated sediment (which was removed in August 1996). In addition, both groundwater monitoring data and geochemical modeling indicate that contamination was neither carried through the vadose zone to contaminate the groundwater or deposited in the vadose zone beneath the depth to which analytical data are available.

RL, and its contractors, have carefully evaluated data collected from the 100-D Ponds TSD unit for compliance with Ecology cleanup standards. These data, discussed in the equivalency demonstration, include analyses of soil samples collected both before and after the voluntary cleanup action performed

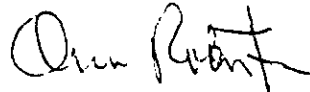
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in August 1996, and analyses of groundwater monitoring data collected since 1992. The equivalency demonstration also presents cogent technical arguments which support the hypothesis that all wastes associated with the operation of this TSD unit have been removed. Based on the reviews, RL remains confident that the quantity, quality, and the location of the data collected and the technical interpretation based on these data strongly indicate that the vadose zone and the groundwater beneath the 100-D Ponds have not been contaminated by this unit and the collection of additional samples from the vadose zone is not warranted.

It is the intent of RL to follow all applicable regulations and clean close the 100-D Ponds in a manner protective of human health and the environment. RL is available to discuss Ecology's objections about regulatory topics presented in the equivalency demonstration, and to open discussions on the technical arguments also included in the document. It is highly desirable to resolve this issue expediently, as the closure plan is scheduled to be incorporated into the 1998 RCRA permit modification. In addition, the fiscal year 1998 work plan, which has been reviewed with Ecology does not contain funding for additional sampling at the 100-D Ponds.

RL will be contacting Ecology, in the near future, to schedule a meeting to discuss these issues. If you want to discuss this matter further or require additional information, please contact Mr. Glenn Goldberg at 376-9552.

Sincerely,



Owen C. Robertson, Senior Project Manager  
Remedial Actions Project

RAP:GIG

cc: D. A. Faulk, EPA  
K. K. Holliday, Ecology  
M. N. Jaraysi, Ecology  
D. R. Sherwood, EPA